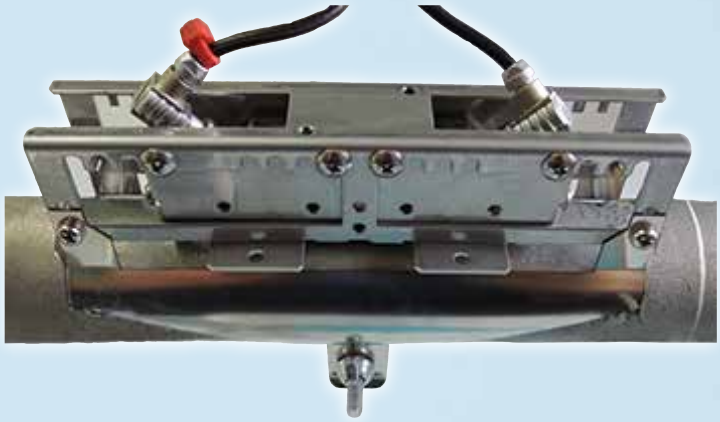
ict co.,ltd.
the expert company of
environmental information system

MADE IN JAPAN

Ultrahigh Accuracy &
Temperature Measurement

Caloriena

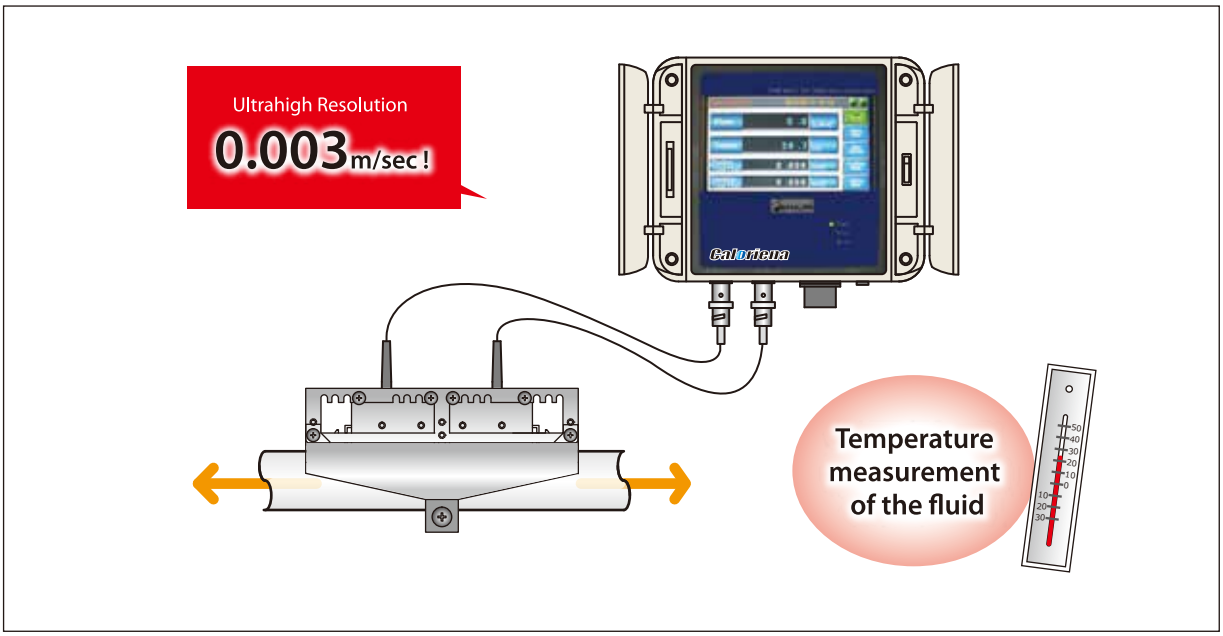
The Ultrasonic Flow Meter



Caloriena

Characteristics

"Caloriena" is the world's first ultrasonic flow meter that enables the measurement of flow rate (velocity) and the temperature of the fluid inside the piping simultaneously from the outside of a pipeline.
With its ultrahigh resolution, the flow meter is provided with the functions of the measurement of micro flow rate (velocity) in both positive and negative directions. On the other hand, an electromagnetic flow meter cannot measure micro flow rate (velocity) or any flow rate (velocity) in a negative direction.
It can be applied, for example, as a caloriemeter for better energy management simply by mounting it on the pipeline.



Controller Section

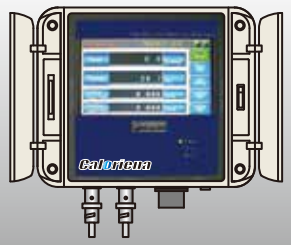
The Controller is connected to the "Sensor section" with a dedicated high frequency cable.
The Controller section sets various parameters (piping information, Measurement method, and output).

Sensor Section

The Sensor section consists of the ultrasonic sensor and fittings, and can be installed to a pipe of any size withtwo screws very easily. Fitting differ depending on pipe size but the sensor can be commonly used for a pipe of any size.

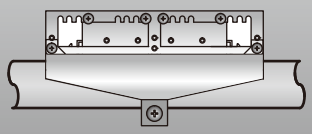
Dynamic Auto-tuning

We've added a phenomenal function to our Caloriena and NINJA.
Dynamic Auto-tuning allows the user to calibrate without stopping the flow.
The controllers are able to automatically adjust or cancel zero offsetting, making installation even easier-just attach, push ON and start measuring!

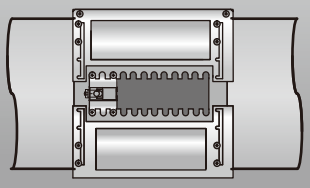


H130×W160×D60
Excluding protrusions

V type



Z type



General Specifications

Item	Standard
Fluid to be Measured	Water, Pure Water, etc.
Piping Material	Vinyl chloride, Stainless steel, Steel, etc.
Applicable Pipe Sizes	1″ - 12″
Measurable Range	0.000-5.000 [m/sec]
Velocity Resolution	0.003 [m/sec] for 4″ pipe
Measurement Accuracy	±1% for FS (at a flow rate of 0.1 [m/sec] or more) ±5% for FS (at a flow rate of less than 0.1 [m/sec])
Fluid Temperature Measurement Range	0.0-50.0[℃] accuracy ±1.0[℃]

Specifications for Sensor Section

Item	Standard	
Supply Voltage & Power Consumption	DC24V (or DC5V-DC26V Battery-powered), approx. 3W	
Man-machine Interface	4.3″ liquid crystal touch panel	
Analog Output	Ch1 (flow rate)	DC 4-20mA (DC0-24mA) (Resistance ≦500Ω)
	Ch2 (temperature)	DC 0-5V
Digital Output (PhotoMOS relay) DC30V 1A	Ch1	Positive flow rate pulse
		Negative flow rate pluse
	Ch2	Measurement error (ERROR)
Recording Medium	SD card	
Communication*	RS485 (Modbus RTU)	9.600～38.400bps
Colendar Clock	Circuit board built in	
Installation Method	With screws or DIN rail	
Working Temperature Range	-5-55℃	

*Optional : cannot be used while recording media

Specifications for Sensor Section

Item	Standard	Remarks
Sensor	Ultrasonic Vibrator	
Installation Method	One touch with screws	Depending on pipe size

	Nomainal size	Sensor type	Minimum flow velocity resolution [m/sec]
Fittings	1″	V type	0.007
	1¼″		0.006
	2″		0.003
	3″		0.002
	4″	Z type	0.003
	6″		0.002
	8″		0.001
	12″		0.001
Water- proof Performance	IP65		

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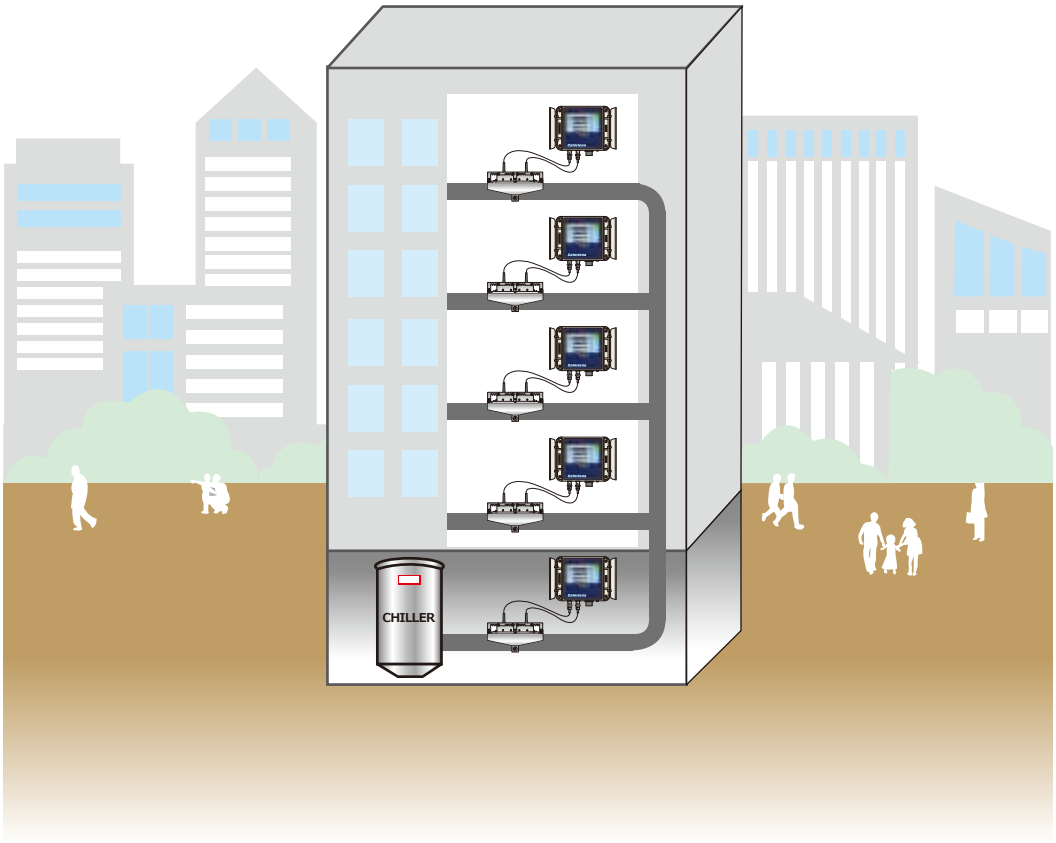
Application

Caloriena, as a caloriemeter for Better Energy Management



You may also be interested in

NINJA

Direct-insertion
Ultrasonic Flow Meter

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